

LISTING OF THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. **(Previously Presented)** An endoscopic imaging system comprising:
an endoscope having an insertion unit which is insertable into an object, the insertion unit having an illumination optical system for illuminating the object and an objective optical system for forming an optical image of the illuminated object;
an imaging apparatus having an imaging device for picking up the optical image and outputting an image pick-up signal;
a camera control unit connected to the imaging apparatus, the camera control unit comprising a synchronizing signal generation circuit for generating a synchronizing signal, and a video signal processing circuit for processing the image pick-up signal at a predetermine timing based on the synchronizing signal, to generate a video signal; and
a connector for connecting the imaging apparatus and the camera control unit, the connector being provided to the imaging apparatus and electrically connected to the imaging device via an elongate signal transmission line, the connector including:
a timing signal generation circuit for generating a periodic timing signal according to the type of the imaging device;
a sampling circuit for sampling the image pick-up signal at a predetermined sampling timing according to the timing signal, and outputting the sampled image pick-up signal to the video signal processing circuit;
a phase delay circuit for delaying the phase of the timing signal by a delay amount according to the length of the signal transmission line; and
an imaging device drive circuit for generating a drive signal to drive the imaging device and inputting the generated drive signal to the imaging device based on the timing signal, the phase of which has been delayed by the phase delay circuit.

2. (Previously Presented) An endoscopic imaging system according to claim 1, wherein the phase adjustment circuit adjusts the phases of the timing signals so that an output signal of the imaging device to be input to the video processing unit will be in phase with a predetermined timing signal produced in the video processing unit.

3. (Canceled)

4. (Previously Presented) An endoscopic imaging system according to claim 2, wherein the phase adjustment circuit adjusts the phases of the timing signals according to a sampling timing of the sampling circuit.

5. (Previously Presented) An endoscopic imaging system according to claim 4, wherein at least one of the imaging apparatus and the video processing unit further has an analog-to-digital conversion circuit for digitizing an analog output signal of the imaging apparatus according to a timing signal generated by the timing signal generation circuit.

6. (Canceled)

7. (Previously Presented) An endoscopic imaging system according to claim 4, wherein at least one of the imaging apparatus and the video processing unit further has checking terminals used to check phase differences between the timing signals generated by the timing signal generation circuit and an output signal of the imaging device having passed through the signal transmission line.

8. (Canceled)

9. (Previously Presented) An endoscopic imaging system according to claim 4, wherein the phase adjustment circuit adjusts the phases of the timing signals by adjusting a resistance of a variable resistor.

10. (Previously Presented) An endoscopic imaging system according to claim 4, wherein the phase adjustment circuit adjusts the phases of the timing signals by adjusting an output voltage of an electronic voltage regulator.

11. (Previously Presented) An endoscopic imaging system according to claim 10, wherein the video processing unit has an electronic voltage regulator voltage setter for setting an output voltage of the electronic voltage regulator.

12. (Previously Presented) An endoscopic imaging system according to claim 4, wherein the phase adjustment circuit adjusts the phases of the timing signals by selecting one of a plurality of delay elements connected in tandem.

13. (Previously Presented) An endoscopic imaging system according to claim 4, wherein the phase adjustment circuit adjusts the phases of the timing signals by employing a delay device for producing a delay, of which the magnitude is varied depending on an applied voltage.

14. (Previously Presented) An endoscopic imaging system according to claim 4, wherein the endoscope is an optical endoscope having a propagation optical system for propagating the optical image, and the imaging apparatus is a TV camera mounted on the optical endoscope and having the imaging device, which picks up the optical image propagated by the propagation optical system, incorporated therein.

15. (Previously Presented) An endoscopic imaging system according to claim 4, wherein the endoscope is an electronic endoscope having the imaging device located at the position of the image plane of the objective optical system, and the electronic endoscope has the imaging apparatus incorporated therein.

16. (Previously Presented) An endoscopic imaging system according to claim 4, wherein the phase adjustment circuit adjusts the phases of the timing signals, that is, a horizontal

driving signal used to horizontally drive the imaging device and a reset signal used to reset the imaging device according to the sampling timing.

17. (Canceled)

18. (Previously Presented) An endoscopic imaging system comprising:

an optical endoscope having an insertion unit which is insertable into an object, the insertion unit having an illumination optical system for illuminating the object, an objective optical system for forming an optical image of the illuminated object, and a propagation optical system for propagating the optical image;

an imaging apparatus mounted on the optical endoscope and having an imaging device for picking up the optical image of the object propagated by the propagation optical system and outputting an image pick-up signal;

a camera control unit connected to the imaging apparatus, the camera control unit comprising a synchronizing signal generation circuit for generating a synchronizing signal, and a video signal processing circuit for processing the image pick-up signal at a predetermine timing based on the synchronizing signal, to generate a video signal; and

a connector for connecting the imaging apparatus and the camera control unit, the connector being provided to the imaging apparatus and electrically connected to the imaging device via an elongate signal transmission line, the connector including:

a timing signal generation circuit for generating a periodic timing signal according to the type of the imaging device;

a sampling circuit for sampling the image pick-up signal at a predetermined sampling timing according to the timing signal, and outputting the sampled image pick-up signal to the video signal processing circuit;

a phase delay circuit for delaying the phase of the timing signal by a delay amount according to the length of the signal transmission line; and

an imaging device drive circuit for generating a drive signal to drive the imaging device and inputting the generated drive signal to the imaging device based on the timing signal, the phase of which has been delayed by the phase delay circuit.

19. (Canceled)

20. (Previously Presented) An endoscopic imaging system according to claim 18, wherein the connector unit has the timing signal generation circuit and the phase adjustment circuit.

21. (Previously Presented) An endoscopic imaging system according to claim 18, wherein the camera head has the timing signal generation circuit and the phase adjustment circuit.

22. (Previously Presented) An endoscopic imaging system comprising:
an electronic endoscope having an insertion unit which is insertable into an object, the insertion unit having an illumination optical system for illuminating the object, an objective optical system for introducing an optical image of the illuminated object, and an imaging device located at the position of the image plane of the objective optical system for picking up the optical image and outputting an image pick-up signal;

a camera control unit connected to the electronic endoscope, the camera control unit comprising a synchronizing signal generation circuit for generating a synchronizing signal, and a video signal processing circuit for processing the image pick-up signal at a predetermine timing based on the synchronizing signal, to generate a video signal; and

a connector for connecting the electronic endoscope and the camera control unit, the connector being provided to the electronic endoscope and electrically connected to the imaging device via an elongate signal transmission line, the connector including:

a timing signal generation circuit for generating a periodic timing signal according to the type of the imaging device based on the synchronizing signal;

a sampling circuit for sampling the image pick-up signal at a predetermined sampling timing according to the timing signal, and outputting the sampled image pick-up signal to the video signal processing circuit;

a phase delay circuit for delaying the phase of the timing signal by a delay amount

according to the length of the signal transmission line; and

an imaging device drive circuit for generating a drive signal to drive the imaging device and inputting the generated drive signal to the imaging device based on the timing signal, the phase of which has been delayed by the phase delay circuit.

23-36. (Canceled)

37. (Currently Amended) An image apparatus comprising:

an imaging device having an imaging device for picking up an image of an object and generating an image pick-up signal; and

a connector electrically connected to the imaging device via an elongate signal transmission line, the connector including:

a timing signal generation circuit for generating a periodic timing signal according to the type of the imaging device;

a sampling circuit for sampling the image pick-up signal at a predetermined sampling timing according to the timing signal;

a phase delay circuit for delaying the phase of the timing signal by a delay amount according to the length of the signal transmission line; and

an imaging device drive circuit for generating a drive signal to drive the imaging device and inputting the generated drive signal to the imaging device based on the timing signal, the phase of which has been delayed by the phase delay circuit;

wherein the sampling circuit performs the sampling at a timing of a constant phase relation with respect to the image pick-up signal even when the length of the signal transmission line is different.

38. (New) The image apparatus according to claim 37, wherein the imaging device is provided with an endoscope camera head connected to an optical endoscope and picks up an optical image to be displayed by the optical endoscope.

39. (New) The image apparatus according to claim 37, wherein the imaging

apparatus is an electronic endoscope having an insertion unit which is insertable into a body cavity, the imaging device being provided at a distal end of the insertion unit.

40. (New) The image apparatus according to claim 37, wherein the sampling circuit samples feedthrough and a signal wave of the image pick-up signal at a timing of a constant phase relation where the feedthrough and the signal wave of the image pick-up signal are inputted.